then the self-existent gravity, which he is obliged to introduce (p. 224) instead of his indefinite persistent force, could never move a single atom, as it would act in all directions equally. Therefore the primitive, indefinite, homogeneous mass has to be finite; and an infinite one is summarily disposed of in his usual way, by being pronounced "unthinkable;" which word he invents as something stronger than "inconceivable" or "impossible." One would have thought infinity of space a good deal more conceivable than space bounded by nothing; nor is it easy to think why the primeval homogeneons matter should come to a sudden stop at some boundary, on the other side of which is nothing.

Moreover, a homogeneous anything is necessarily definite in substance too, whether we know what the substance is or not. Again though he is pleased to call it incoherent, it was held together by gravity, without which, he says, matter is inconceivable, and it is his one actual initial force; and it is all that holds fluids together now. Probably "the attraction of cohesion" of solids is some other force, which also Mr. Spencer has got to invent or account for by his universal solvent, the conservation of force, and the cohesion represents the heat that is requisite to dissolve it. But no one could possibly divine "a priori" how much more heat would be required to dissolve iron than lead, and lead than ice. Therefore these are laws of nature demonstrable only by experience, and requiring creation and maintenance, and not necessary truths independent of experience.

Next for the "definite coherent heterogeneity." Coherence we have already seen to be merely a word of degree, depending upon the amount of "integration" or condensation that has taken place, up to date, as they say. There has been no such thing in nature, since gravity came in, as absolute incoherence,—though there may be a good deal of it in "synthetic philosophy." Again, if homogeneity must be a definite something, as it plainly must, heterogeneity can be no more definite, and unfortunately it can be much less. For heterogeneous things,—even solid, and fluid ones still more, and gaseous above all—may be so intermixed and varied in density that the composition may be more properly called indefinite than definite. Therefore it turns out that all those fine adjectives mean just nothing, except that "definite and indefinite" ought to be reversed, if used at all. And then, what is a "parallel transformation of retained motion" which is undissipated by integration? I look in vain through the Spencerian pages for an answer. It certainly never is parallel to its former direction after transformation. So there we must leave it, and "dissipation of motion" too, with the remarks I made on it just now as a necessary companion of integration, whereas it may just be the contrary.

What then remains of that portentous formula, the final and complete expression of the "Evolution of the Cosmos" out of self-existent matter by persistent force? Mr. Spencer, in his new Appendix, rebukes some great mathematicians for making fun of it without any serious argument, and says that they have not perceived poor ignorant creatures as they are, that "language of the highest abstractness is necessary" to express such transcendental truths. I have not done that, tempting as it may be. But I have shown that every important word in it is either unmeaning or wrong, and ought to be reversed or combined with its opposite.

I am not reviewing Mr. Spencer's book generally, and am only concerned to exhibit the absurdity of his alternative to the old theory of a Creator ordaining and maintaining laws of nature; which he calls "the carpenter theory of creation, (p. 120) maintained only in the pride of ignorance," of which I shall say a little more at the end. I might be content with this exposure of his final formula or definition of Evolution. But, if I stopped here, perhaps his disciples would say that it is a mere verbal question, and that they can afford to give up his definition of Evolution, unless we can also refute the process by which he has satisfied them that the world was evolved by persistent force. I do not expect to convince them of anything. But perhaps I may some other people, who are waiting to see if his other automatic processes are admitted to be possible results of the conservation of force, now that it is admitted to be true, not indeed as an axiom transcending demonstration and underlying experience, but as a law of nature proved by experience.

His various automatic processes, with their wonderful designations, are all proved to the satisfaction of his admirers by a peculiar kind of logic, which consists in giving some specimens of each of them, and then pronouncing them universal, and then "necessary corollaries of persistent force," sometimes adding that every body will (or ought to) "see it." Whenever any "minor incident forces" are wanted, viz.: such trifles as gravity, electricity, heat, crystalization, and all the chemical and vital forces, they are instantaneously generated by Mr. Spencer's word, that matter is unthinkable without them. These processes of Spencerian Evolution are not only the integration and disintegration, differentiation and redistribution, dissipation and retention, which we have made acquaintance with already, but some more, viz.: the Instability of the homogeneous, the Rhythm of all motion, Segregation, Multiplication of effects, Equilibration, and finally Dissolution (only that also is not final, any more than the "final formula" of Evolution), besides a few promiscuous phenomena, hardly to be called processes or causes. There is a chapter on "The Direction of Motion," which begins with the important admission that "the absolute cause of changes, no matter what may be their special nature, is . . . . incomprehensible." What are we to think of a philosopher who professes to "unify all knowledge," and to deduce everything from a single indestructible force in no known direction, and then tells us that the initial change in every direction is incomprehensible—without a Creator? for it is absurd to say they are incomprehensible with one, except as to his "modus operandi," which we have nothing to do with here—only with his existence.

It may be thought of little consequence whether he is right or wrong in saying that the conservation of force is not an experimental law of nature, but a necessary truth or axiom "transcending demonstration and underlying experience by being the basis of it"—and the only one; for he expressly denies that all the commonly recieved axioms are self-evident or necessary truths (179 n.). But it is of more consequence than it looks; for if the conservation of force is really a self-evident truth, it is not a law of nature which required making by the only power that can make them. As a matter of fact, it has been established by a long series of experiments by real philosophers, who knew very well that it could only be an inductive truth, and not a deductive one, if true at all. Mr. Spencer has never discovered one single fact or law of nature, or a new cause or effect of any kind. He merely takes the correlation, or conservation, or indestructibility of force as he found it, gives it a new name, and dogmatically asserts that it is a necessary and self-evident truth prior to all experience, and that from it all the laws of nature come.

For some reason of his own too, or perhaps only from a determination to have a phraseology as well as a religion of his own, he is pleased to call necessary or self-evident truths "postulates," instead of axioms, which have always hitherto meant quite different things. The reason he gives for himself and Professor Huxley inventing the term "persistence of force" instead of "conservation," as everybody else calls it (if not correlation) is that "conservation implies a conserver," which he therefore denies, although he over and over again assigns that as the only function of the power which it is the only business of religion to acknowledge. "Correlation," at any rate, does not imply a correlator; but that was old, and "Persistence" is new. And that is the way he sets to work to show that it is the one necessary truth:—"All reasoned-out conclusions" must rest on some "postulate." We cannot go on merging derivative truths in those wider and wider truths from which they are derived without reaching at last a widest truth which can be merged in no other, or derived from no other. And whoever contemplates the relation in which it stands to the truths of science in general "will see" that this truth transcending demonstration is the "persistence of force" (192 e.). It is possible that Mr. Spencer does not himself see, but only expects unbelievers in a Creator but believers in him not to see, that any other proposition, not obviously false, might be substituted with equal logic for "persistence of force" in that sentence? What would he say if we substituted the "existence of a Creator" for it? Yet that is a vast deal more self-evident than the conservation of force.

Perhaps he or his followers may say that it is the very nature of axioms or self-evident truths not to be demonstrable by reasoning. But, without going into any abstract discussion of that kind, I suppose they will admit that something more than mere assertion is requisite to establish a new axiom; especially when a series of eminent philosophers had been for years trying to prove the thing in question by elaborate experiments, and have at last succeeded, so far as any law of nature can be said to be absolutely proved. Real axioms are not proved by experiments. And let us see one or two specimens of this self-evident truth, which Herschel's "sufficiently clever man shut up by himself" ought to have been able to divine, if it is a real axiom, but not otherwise. When two equal lumps of clay hung close together as pendulums meet, with equal velocity, they simply stop. All their motion appears to be lost; and the cleverest man in the world would have said that it is, and must be, until something more was known. No one could possibly have guessed that in those two dead, still, and cold-looking lumps a set of invisible vibrations would be set up, which we call heat, now that we have learnt by other experiments, and not by divination, what heat is; though to be sure Newton did divine that.

A synthetic philosopher sees somebody else turning a glass wheel under the friction of a piece of silk, evidently with more resistance than if the silk were cotton. The philosopher is asked to divine, without any information from experience, what becomes of all the force that the man has to exert beyond the ordinary friction. Does Mr. Spencer think he could have divined by any "a priori" process that a wire would carry that apparently lost force invisibly to the other side of the world, and there write sentences, illuminate a room (if the machine is big enough), perform chemical operations, melt steel and grow peaches faster than the sun alone? If his philosophy is right, he ought to be able to divine all this, and every natural phenomenon in the world, without a single experiment. So far from that, he does not pretend to show how any single transformation could have been divined "a priori," or deduced from his own assumed divination of the persistence of force. Yet his disciples are silly enough to believe that he has deduced and proved them all; which would indeed have "surpassed Newton in the vastness of the performance."

He thinks he gives a further proof of its axiomatic character by saying that Newton's "Axioms or Laws of Motion" involve it, which Newton certainly did not know—nor anybody else. Of course they are "consistent" with it, because both are true; but that is another thing. He forgets too, that he denies all other "axioms" to be axiomatic except his own. Then if Newton's depend on his (which they do not the least), they cannot prove it. If they are really axioms prior to his, and prove it (which also they do not), then his is not the one transcendental truth, "the ultimate of ultimates," but sinks into a mere consequence of Newton's laws; like elliptic orbits of the planets, which are a necessary consequence of gravity and of whatever gave them their initial impulse; which also Mr. Spencer thinks he can dispense with, though he several times rightly says that a single uniform force of that kind could only produce uniform motion in one direction—i.e., towards the centre of gravity of the universe (287 and 481).

(To be Continued.)

Extra-Territorial Jurisdiction.

We have heard occasionally for some time past of the anxiety of the Japanese Government to persuade the foreign Powers with whom they have treaties, to give up the system of claiming judicial functions for their Consuls and insisting that their own subjects shall only be tried or sued before them, or before a mixed Court. How the proposition is viewed by some of those most interested, may be gathered from the following remarks upon it made at a recent meeting of the Yokohama Chamber of Commerce, by an influential member of the business community of that place:

Parties who have little practical knowledge of it, or who are interested, picture a state of things which carries the idea of oppression on the part of the stronger nations. Now I hazard the assertion that practically there is very little of serious friction in the present machinery of the relations with foreign powers; there may be a certain amount of feeling of injured pride, but I verily believe, speaking with all diffidence, that this owes its origin to a great extent to some of Japan's foreign advocates or advisers. No doubt, more especially in later years, Japan has had many among these both able and worthy, but it is not so in all cases; and there are some on whose assistance she is not to be congratulated. But I presume the boldest of these latter would not venture to say that twenty years ago it was possible that any jurisdiction over aliens could have been conceded to this country, or say even ten years, or even five, or let us come down even to three. The want of any written law; the utter dissimilarity of thought and feeling; the despotic method of treatment by one class of another; the prevalence of torture; a code of morality of a unique pattern, all these would have combined to set at nought any notion of the kind. But within the last year or two, or two or three years, a written code has been formed and it is understood that it is to some extent working. But surely it will be only decent that at least we should see a little how it works before we are entrusted to its care. It is no great matter to write out a code but a very different thing to administer it; and especially when for generations all habits of thought and ideas have been in a different groove. Let us just illustrate by some examples the position of a Japanese towards the judiciary administration of his country and the position a foreigner would find himself in if under that administration. Is there any *habeas corpus?* Is it not still the case that a man can be thrown into prison on a mere suspicion and kept there for weeks without trial? I know for a fact that comparatively recently this has been done. Shall I be liable to be brow-beaten by a policeman if I walk on the bund without a lantern, even under the gas lamps? a small matter, but the representative of a good deal. Or, take a more serious question, the marriage law, or rather marriage customs of the country, for I suppose there are no marriage laws. Is the foreigner to have the power, or the privilege of being able to tell his wife she may go—he does not want her any more? These are aspects in which the subject should be considered, and there is another point, a delicate matter, which I wish to allude to only in a proper spirit; the State religion of Japan is a paganism of a very primitive type, containing, as far as I know, no code of morality worthy of the name. People at home should know precisely how and where their fellow-citizens stand in relation to extra-territoriality jurisdiction. It must take generation at any rate before a state of thought and feeling can be developed here, which shall place this country in consonance with the platform of the west. Then, as to opening the country, which we hear of as something of a *quid pro quo* for the surrender of alien privileges. Let there be no mistake on this point. I do not believe that it will have any material effect in increasing the opportuities for foreigners to do business. Indirectly and gradually it will foster business, and it will at once obviate a good many annoyances, but the benefit will assuredly be more for Japan than for the foreigner, while on the other hand I cannot understand how this country can aspire to be considered enlightened and civilised while it closes the land in this fashion; a relic of the darker ages of its seclusion. There is no other country in the world besides this which adopts this course.

In connection with this subject we find the following remarks in a leading article in the *Japan Gazette*:

"The Government are weary of negotiating for even a limited surrender of jurisdiction; and their policy is consequently likely to assume a shape unexpected and surprising. In well-informed circles in Tokio the impression gains ground that on the arrival of Mr. Plunkett the tariff question, which was virtually decided some time ago, will be finally settled; and certain other conditions of the treaty will be modified in the manner experience shows to be desirable. Upon the conclusion of these negotiations, the Government will announce that the whole of Japan is thrown open to foreign travel, residence and trade; but every person availing himself of that privilege, whatever his nationality, will be subjected to the operation of Japanese civil and criminal jurisdiction."

There can be little doubt that the Japanese are seriously bent on doing away with what they feel to be a stigma on their administration. Some part of their curiosity about, and interest in, the people and affairs of this country, has its origin in the fact that it has always been exempt from this anomaly.

Fearful Disaster in Canton Waters.

By the S. S. City of Tokio we have the sad news of a terrible boiler explosion of the river steamer Yotsai, on the Canton river. The *Daily Press* says that the Hongkong, Canton, and Macao Steamboat Company's steamer Yotsai, had lately undergone rather extensive repairs and went for a preliminary trial trip on the 23rd of February. Afterwards she went to Macao to resume her station on the line between that port and Canton. The vessel was in command of Captain Hoyland, and had on board as passengers, Mr. J. S. Brewer, Government Marine Surveyor, Mr. D. E. Caldwell, solicitor, Mr. and Mrs. R. Fraser-Smith, Mr. and Mrs. S.M. Fraser-Smith, Mr. P. A. da Costa, Secretary to the Steamboat Company, and Messrs. G. Frisell, W. L. Scott and G. F. Pinker, of the Dock Company. After the vessel had been under way about half-an-hour it was observed the engines were priming, but that irregularity was corrected. The passengers sat down to tiffin shortly after two o'clock. During the meal a large escape of steam from the steam pipe was remarked and Messrs. Tinker and Brewer left the table to investigate the cause. They came back shortly afterwards, and Mr. Brewer said something reassuring, but a few minutes later Mr. Pinker again left the table for the engine room, and at ten minutes past three a frightful explosion of one of the boilers took place, which blew away the whole of the after part of the vessel, including the after deck house where the captain and passengers were seated, with the result that the whole of them were hurled into the air and of the number of those named above only Captain Hoyland, Mr. and Mrs. Fraser, Mr. Brewer, and Mr. Caldwell escaped from death. The survivors were saved by climbing out of the water upon the roof of the deck house, which had been precipitated some distance from the vessel except Mrs. Fraser-Smith, who was rescued by a Portuguese sailor who had found his way into a boat. Amongst the crew there was also a large mortality, comprising Mr. J. Wood, the chief engineer, two stewards (Chinese), nine firemen, and one seamen. Two Chinese fishing junks bore down to the scene of the disaster and picked up the survivors, whom they brought on to Hongkong, where they arrived about half-past ten o'clock the same night. The survivors suffered bitterly from their immersion and subsequent prolonged exposure to the cold north wind then blowing.

The boiler had been previously tested by hydraulic pressure to 60 lbs., which the Government Marine Surveyor considered certainly ample for the working pressure to be put upon the boiler, which was to be limited to 25 lbs.

A lady, upon visiting Mr. Barnum's white elephant in his London quarters, expressed her disappointment in finding the animal merely of a gray color. "Well, ma'am," said the keeper consolingly, "maybe he ain't werry white, but then he's werry sacred."

Guest—"This beer is very poor; I can hardly drink it." Host—"Just close your eyes and drink it down." Ten minutes later. Host—"Hello, this is only half the price of your beer." Guest—"Just close your eyes and put it in your pocket."

The orange crop of Florida this season is estimated at 60,000,000 oranges, which will net the growers $1,200,000. The crop next year will be very much larger, as thousands of acres of young trees will commence bearing. The increase in the westward shipment of oranges, compared with last year, was at least 500 per cent. and yet the supply was not equal to the demand.

The Boston bird show embraces nearly 2,500 entries. It contains a Brazilian macaw that can repeat the first thirty lines of the Declaration of Independence, a canary that whistles "Yankee Doodle," the only Irish wren and African tourako in America and an eagle with wings that spread nine feet.